26th International Multi Topic Conference (INMIC) 2024

<u>Schedule for Technical Sessions</u>

Organized by

Department of Biomedical Engineering, Faculty of Engineering

Salim Habib University

Karachi, Pakistan

in Collaboration with

IEEE Karachi Section

Technical Session I (9:15 am – 10:45 pm)			
Session Chairs: Dr. Muhammad Ibrar-ul-Haque, Dr. Lubna Aziz			
Venue: Seminar Room 1 (Ground Floor)			
Microsoft Teams meeting: **Click here to join the meeting**			
Keynote Speaker Session (9:15 am – 9:30 am)	**ON-DEMAND HPC PLATFORM FOR ACCELERATING AI WORKLOADS** *Dr. Mohsin Ahmed Shaikh, Saudi Arabia*		
Time	**Paper ID**	**Paper Title**	**Authors**
9:30 am – 9:45 am	240	Indigenous Development of High-precision magnetometer Data Acquisition system for Geomagnetic observatories in Pakistan.	**Taha Amjad**, Syed Riaz un-Nabi Jaffri, Hashim Raza Khan, Alishba Arshad, Muhammad Ibtisam Zaidi, Huzaif Sami
9:45 am – 10:00 am	250	A Multi-Agent Deep Reinforcement Learning Framework for Personalized Cancer Treatment Decision Support in Dynamic Clinical Scenarios	**Madeha Arif**
10:00 am – 10:15 am	209	Enhancing Breast Cancer Diagnosis in Mammography: Evaluation and Integration of Convolutional Neural Networks and Explainable AI	Maryam Ahmed, **Tooba Bibi**, Dr. Rizwan Ahmed Khan, Sidra Nasir
10:15 am – 10:30 am	185	Optimizing Gaze Estimation: A Comparative Study of Loss Functions and Deep Architectures	**Samiya Ali Zaidi**, Unaiza Ahsan
10:30 am – 10:45 am	223	Leveraging Recurrent Neural Networks in Virtual Reality-based Digital Twin Models for Enhanced Predictive Maintenance of Industrial Machines	Hamad Razzaq, Muhammad Jazzel, **Farhan Khan**

Technical Session II (9:15 am – 10:45 pm)			
Session Chairs: Dr. Umme Laila, Dr. Muhammad Shafiq			
Venue: Seminar Room 2 (Ground Floor)			
Microsoft Teams meeting: **Click here to join the meeting**			
Keynote Speaker Session (9:15 am – 9:30 am)	**COMPOSABLE HPC INFRASTRUCTURE FOR CONTINUUM MECHANICS WORKLOADS** *Dr. Rooh Khurram, Saudi Arabia*		
Time	**Paper ID**	**Paper Title**	**Authors**
9:30 am – 9:45 am	18	A Low-Profile X-Band Slotted Waveguide Array Antenna for Radar Applications	**Dr Muhammad Abdur Rehman Hashmi**
9:45 am – 10:00 am	132	Comparative Analysis of BERT and TF-IDF for Textual Semantic Similarity Assessment	**Syed Muhammad Hasan Danish**, Syed Muhammad Ejaz Hasnain, Hamza Ashraf, Dr. Rukaiya
10:00 am – 10:15 am	160	A Qualitative Study of Bibliographic Data Sources and Retrieval Mechanisms for Computational Research	**Muhammad Qasim Pasta**, Aiza Imran
10:15 am – 10:30 am	126	Comprehensive Feature Information Learning for Multilabel Text Classification	**Anaum Hamid**, Muhammad Raf
10:30 am – 10:45 am	260	Table Talk: Querying Tables with Natural Language	**Farhan Dhanani**, Muhammad Raf

Technical Session III (9:15 am – 10:45 pm)			
Session Chairs: Dr. Razia Maroof, Dr. Ovais Akhtar			
Venue: Classroom No C-22 (2nd Floor)			
Microsoft Teams meeting: Click here to join the meeting			
Keynote Speaker Session (9:15 am – 9:30 am)	**SUBSTITUTION BOXES IN IMAGE ENCRYPTION APPLICATIONS FOR HIGHLY CORRELATED DATA** *Dr. Jawad Ahmad, Prince Mohammad Bin Fahd University, Saudi Arabia*		
Time	**Paper ID**	**Paper Title**	**Authors**
9:30 am – 9:45 am	168	SegLink: An Advanced Lane Detection Network with Minimal Computational Overhead Using Semantic Segmentation	**Madiha Shabir Shaikh**, Dr. Sadia Muniza Faraz, Yawar Rehman
9:45 am – 10:00 am	31	Estimating Green Energy Solutions for City Centers to Mitigate CO_2	**Muhammad Muneeb Khan**, Muhammad Saad Khan Khosa, Muhammad Aamir Shafi
10:00 am – 10:15 am	262	Enhancing Security in Smart Home IoT Networks: Vulnerability Analysis and Mitigation Strategies	**Tariq Mumtaz**, Huzaifah Tariq Ahmed, Syed Asghar Abbas Zaidi
10:15 am – 10:30 am	176	ML-Enhanced IoMT-based Electrocardiogram Monitoring System for Patient-Centric Solution	**Sundus Ali**, Muhammad Imran Aslam, Zaryab Ahmed Khan, Asma Khalid, Arhamna Ayub Khan, Hania Ali Shaikh
10:30 am – 10:45 am	112	Design and Implementation of a Low-cost Low-power Compact Node for Long Distance IoT Applications	**Aleem Mushtaq**, Manaal Khan

Technical Session IV (9:15 am – 10:45 pm)			
Session Chairs: Dr. Syed Saood Zia, Dr. Tayyab Yaqoob			
Venue: Class Room No: C-17 (2nd Floor)			
Microsoft Teams meeting: Click here to join the meeting			
Keynote Speaker Session (9:15 am – 9:30 am)	**STRUCTURING TOPICS ON LARGESCALE SOCIAL MEDIA FOR DISCOVERING PEOPLE'S PERCEPTIONS** (Online) *Prof. Dr. Takako Hashimoto, Chiba University of Commerce, Japan*		
Time	**Paper ID**	**Paper Title**	**Authors**
9:30 am – 9:45 am	269	Digital Forensics across Multiple Android Versions using the MOBILE edit Forensic Tool	**Kohal Deep**, Pardeep Kumar, Najma Imtiaz Ali, Imtiaz Ali Brohi, Dua Agha
9:45 am – 10:00 am	135	Evaluation of Predictive and Heuristic Control Techniques for Buck Converters Using MPC, PID, and Fuzzy Logic	**Laksh Rathi**, Muhammad Ayaz, Dur-e-Zehra Baig, Shazil Ejaz, Marrium Dawood, Muhammad Armughan Ul Haq
10:00 am – 10:15 am	164	ML-Driven Distribution Network Aggregation Considering Load and Inverter-Based Resources	**Batool Zehra Ladha**, Manal Hasan, Rubab Shah, S. M. Hur Rizvi
10:15 am – 10:30 am	271	Advanced triple-Input Source Modelling for Electric Bicycle Propulsion System	**Asmatullah Khan**, Dr. Muhammad Rauf

Department of Biomedical Engineering, Faculty of Engineering
in collaboration with IEEE Karachi Section
presents

📅 December 30-31   26th INMIC 2024

26th INMIC
International Multi Topic Conference 2024

Technical Session V (9:15 am – 10:45 pm)			
Session Chairs: Dr. Shoaib Mughal, Dr. Durr e Jabeen			
Venue: Class Room No: C-19 (2nd Floor)			
Microsoft Teams meeting: Click here to join the meeting			
Keynote Speaker Session (9:15 am – 9:30 am)	**SENSOR FAULT DIAGNOSTICS USING MACHINE LEARNING** *Dr. Sana Ullah Jan, Edinburgh Napier University, United Kingdom*		
Time	**Paper ID**	**Paper Title**	**Authors**
9:30 am – 9:45 am	101	Design and Implementation of a Localization App to Achieve Sub-Meter Level Accuracy using Suparco's Pak-Rehber Precise Positioning Service	Muhammad Jazzel Mehmood, Syed Muhammad Muslim Hussain, Syed Asghar Abbas Zaidi, **Dr. Farhan Khan**
9:45 am – 10:00 am	116	A Comprehensive Analysis of Chronic Kidney Disease Prediction through Machine Learning: Insights from Decision Tree Modeling	**Priha Bhatti,** Maria Kainat, Munsif Ali Jatoi, Iqra Heer Bhatti, Asadullah Munir, Muhammad Ather Ameen
10:00 am – 10:15 am	119	Reconfigurable Cryptoprocessor Design for RSA and Rabin-p Cryptosystems	Zain Usmani, Mohit Rai, **Farhan Khan**
10:15 am – 10:30 am	232	AI-Powered Cybercrime: A Survey on Emerging Threats, Tools & Techniques for Countermeasures	**Mumtaz Hussain,** Tariq Soomro
10:30 am – 10:45 am	25	Ideal Tilt Angle of a Photovoltaic System for Sustainable Rooftop Solarization in Karachi	**Muhammad Muneeb Khan**, Sana Ullah Bhatti, Muhammad Aamir Shafi

Technical Session VI (2:15 pm – 4:00 pm)			
Session Chairs: Dr. Fahad Azim, Dr. Eraj Mirza			
Venue: Seminar Room 1 (Ground Floor)			
Microsoft Teams meeting: Click here to join the meeting			
Keynote Speaker Session (2:30 pm – 2:45 pm)	**Elevating Connectivity: UAVs, IoT, and 5G in Moving Cells and Remote Sensing (Online)** *Prof. Dr. Raed Mesleh, German Jordanian University, Jordan*		
Time	**Paper ID**	**Paper Title**	**Authors**
2:45 pm – 3:00 pm	28	Enhanced Synthetic Images Classification with Vision Transformers and Effective Data Augmentation Techniques	Khadija Haider, **Muhammad Sohail Abbas**, Asif Muhammad, Muhid Qaiser
3:00 pm – 3:15 pm	19	Smart Diagnostic System for Classification of COPD and Healthy Subjects from Lung Sound Analysis	**Ahmed Ali Saif,** Syeda Zainab Mousavi, Haris Anwar, Syed Arsalan Mustafa, Muhammad Faraz, Syed Zohaib Hassan Naqvi
3:15 pm – 3:30 pm	171	Investigating Effects of Variation in Evaluating Dialogue Quality Using Large Language Models	**Amna Irum**
3:30 pm – 3:45 pm	157	Deepfake Urdu Audio Detection using Spectral Features for Automatic Speaker Verification	Zulkaif Sajjad, Hassan Alam, Nouman Ahmed, Areeba Shahzad Raja, **Junaid Mir,** Furqan Shaukat
3:45 pm – 4:00 pm	13	Video and Inertial Sensors Fusion for Activity Recognition: A Machine Learning Approach	**Iqra Aijaz Abro**, Ahmad Jalal

Organized by Department of Biomedical Engineering, Faculty of Engineering
SALIM HABIB UNIVERSITY

Technical Session VII (2:15 pm – 4:00 pm)			
Session Chairs: Dr. Sidra Abid, Dr. Ali Asghar			
Venue: Seminar Room 2 (Ground Floor)			
Microsoft Teams meeting: Click here to join the meeting			
Keynote Speaker Session (2:30 pm – 2:45 pm)	**AI/ML for EMI Simulations and Troubleshooting (Online)** *Prof. Dr. Mohamed Kheir, University of Southern Denmark, Denmark*		
Time	**Paper ID**	**Paper Title**	**Authors**
2:45 pm – 3:00 pm	202	Reinforcement Learning-Based Multi-Robot Path Planning and Congestion Management in Warehouse Order Picking	**Muhammad Umer Khan,** Muhammad Shahab Alam, Ahmet Gunes
3:00 pm – 3:15 pm	236	Nonlinear MPPT optimization for PV system via RNN and condition-based super-twisting sliding mode controller	**Omar Zeb**, Iftikhar Ahmad
3:15 pm – 3:30 pm	241	Flexibility Enhancement in Heat Pump-based Indoor Temperature MPC	Crescenzo Pepe, **Mir Farooq Ali,** Silvia Maria Zanoli
3:30 pm – 3:45 pm	127	Detection and Mitigation of DDoS Attacks on IoT Networks Using Machine Learning	**Akram Rashid**, Syed Muhammad Khaliq-ur-Rahman Raazi
3:45 pm – 4:00 pm	199	Design of a Low-Noise, High-Quality Variable Gain Pre-Amplifier for Acoustic Applications	**Saqib Ali,** Umar Hamid, Khurram Shehzad, Talha Saeed Irshad, Arwa Aamir, Shahid Ali

Technical Session VIII (2:15 pm – 4:00 pm)			
Session Chairs: Dr. Saad Jawaid Khan, Dr. Mariam Raziq			
Venue: Class Room No: C-22 (2nd Floor)			
Microsoft Teams meeting: Click here to join the meeting			
Keynote Speaker Session (2:30 pm – 2:45 pm)	**TWO DIFFERENT YET COMPLEMENTARY TECHNOLOGIES** *Prof. Dr. Pardeep Kumar, Quaid-e-Awam University, Pakistan*		
Time	**Paper ID**	**Paper Title**	**Authors**
2:45 pm – 3:00 pm	47	A lightweight Federated Learning-based Intrusion detection model for Internet of Things	**Dr. Noshina Tariq,** Mamoona Humayun, Ghadah Naif Alwakid, Bushra Almas, Noor Zaman Jhanjhi, Muhammad Zakwan
3:00 pm – 3:15 pm	123	Malware Detection in Network Traffic Data for Internet of Thing	Rawish Butt, **Dr. Noshina Tariq**, Mamoona Humayun, Ammara Ishaq, Noor Zaman Jhanjhi
3:15 pm – 3:30 pm	222	Edge Computing-Enhanced Machine Learning Framework with Anomaly Detection-Aware Predictive Modelling in IoT Healthcare Systems	Maram F Almufareh, **Dr. Zulfiqar Ahmad,** Aisha Pervez, Mehreen Iftikhar
3:30 pm – 3:45 pm	124	Early Bearing Fault Detection of Industrial Fans based on Vibration Analysis using Interpretable Deep Learning Framework	**Ali Saeed,** M. Usman Akram, Muazzam A. Khan, M. Belal Afsar
3:45 pm – 4:00 pm	23	Photovoltaic System based border Markets	**Muhammad Muneeb Khan**, Sana Ullah Bhatti, Muhammad Aamir Shafi

Department of Biomedical Engineering, Faculty of Engineering
in collaboration with IEEE Karachi Section
presents

26th INMIC
International Multi Topic Conference 2024
December 30-31 | 26th INMIC 2024

Technical Session IX (2:15 pm – 4:00 pm)			
Session Chairs: Dr. Abul Hasan, Dr. Hira Zahid			
Venue: Class Room No: C-17 (2nd Floor)			
Microsoft Teams meeting: **Click here to join the meeting**			
Keynote Speaker Session (2:30 pm – 2:45 pm)	HELPING BONES TO GROW AND EXTEND HIP IMPLANT LONGEVITY! PTIMIZING PLASMA-SPRAYED HYDROXYAPATITE COATINGS (Online) *Prof. Dr. Joseph Stokes, Dublin City University, Ireland*		
Keynote Speaker Session (2:45 pm – 3:00 pm)	SHAPING CURRENT AND FUTURE PRODUCT DESIGN AND MANUFACTURING USING INDUSTRY 4.0/5.0 TECHNOLOGIES (Online) *Dr. Inam Ul Ahad, Dublin City University, Ireland*		
Time	**Paper ID**	**Paper Title**	**Authors**
3:00 pm – 3:15 pm	270	Benchmarking Performance Analysis of Optical Character Recognition Techniques	Muhammad Ali Naqi Hadi, Maria Gul, **Dr. Maqbool Khan,** Ghadah Naif Alwakid, Noor Zaman Jhanjhi
3:15 pm – 3:30 pm	148	Enhanced Bone Fracture Diagnosis in X-rays Using Fine-Tuned DenseNet169 Deep Learning Model	**Ali Orangzeb,** Shahzad Memon, Lachhman Das Dhomeja, Mukesh Prasad, Asghar Ali Chandio
3:30 pm – 3:45 pm	263	Using Technology to Improve Awareness, Convenience, And Communication About Neurodivergence in Higher Educational Institutes in Pakistan.	**Ushna Batool,** Areeb Adnan Khan, Urooj Siddiqui, Neelma Bhatti
3:45 pm – 4:00 pm	130	Observer-based Adaptive Sliding Mode Control of a Switched-Boost Converter for PV System	**Shahab Shahid**, Dr. Iftikhar Ahmad, Muhammad Rizwan Chughtai, Daniyal Durrani, Sadia Zafar, Badar Dar

Technical Session X (2:15 pm – 4:00 pm)			
Session Chairs: Engr. M. Shaheer Mirza, Engr. Abdul Moiz			
Venue: Class Room No: C-19 (2nd Floor) – **Online**			
Microsoft Teams meeting: **Click here to join the meeting**			
Time	**Paper ID**	**Paper Title**	**Authors**
2:30 pm – 2:45 pm	238	An Exploratory Study of Entrepreneurial Marketing in Medical Supplies Purchase Decision Making: The Case of Ultrasound Gel in Public Healthcare Agency	**Panita Rachapaettayakom,** Wachira Ponboon
2:45 pm – 3:00 pm	217	Unveiling Utopia of False Information in The Digital Era through The Lens of Bibliometric Analysis	**Mahaning Indrawaty Wijaya,** Diana Utomo, Suzanna, Jane Ivana, Widodo Budiharto
3:00 pm – 3:15 pm	249	Experimental Validation of Nonlinearity Mitigation in Analog Radio over Fiber for upcoming 6G Networks Using MSA-Based Digital Predistortion	**Muhammad Usman Hadi,** Zaigham Abbas, Muhammad Ijaz
3:15 pm – 3:30 pm	234	Digital Twin-Driven Hybrid Control for MADNI Stability in Adverse Conditions	**Cara Rose,** Zaigham Abbas, Robert McMurray, Muhammad Usman Hadi
3:30 pm – 3:45 pm	243	Application of Generalized Stochastic Petri Nets for Performance Analysis of a Production Process	**Alessandro Di Biase,** Luca Caponi, Federico Catalini, Crescenzo Pepe, Silvia Maria Zanoli
3: 45 pm – 4:00 pm	246	Design and Implementation of an Electric Bicycle Using BLDC Motor with Optimized SVPWM Technique	**Mudassar Usman,** Muhammad Asif, Haseeb Hussain, Tanzeel ur Rehman, Uzair Zafar, Abaid Ur Rehman

Organized by Department of Biomedical Engineering, Faculty of Engineering
SALIM HABIB UNIVERSITY

Technical Session XI (9:15 am – 10:45 am)			
Session Chairs: Dr. Tariq Javid, Dr. Raja Masood Larik			
Venue: Seminar Room 1 (Ground Floor)			
Microsoft Teams meeting: Click here to join the meeting			
Keynote Speaker Session (9:15 am – 09:30 am)	**RESEARCH INNOVATION IN PAKISTAN (Online)** *Dr. Zia Mohy Ud Din, Air University, Pakistan*		
Keynote Speaker Session (9:30 am – 09:45 am)	**NEUROROBOTICS AND BRAIN COMPUTER INTERFACE FOR ROBOTIC REHABILITATION (Online)** *Dr. Noman Naseer, Air University, Pakistan*		
Time	**Paper ID**	**Paper Title**	**Authors**
9:45 am – 10:00 am	267	Design and development of a low-cost system for acquisition of ECG, EOG, EMG, EEG	**Hafiz Muhammad Hammad,** Muhammad Aqil, Muhammad Shahid Nazir
10:00 am – 10:15 am	197	Development of Facile Pressure Sensors for Prevention of Pressure Ulcers in Paralysis Patients	**Azmat Saleem**, Samra Shaheen, Munawar Arshad, Muhammad Farhan, Abdul Hanan Taqi, Muhammad Qasim
10:15 am – 10:30 am	41	Finite Element Analysis of Bioresorbable LAE442 Magnesium Alloy Intramedullary Nail for Internal Femoral Fracture Fixation	**Muhammad Taha Bin Athar,** Hafsah Sohail, Zainab Ali, Nizam Uddin, Syeda Shifa Mannan Gilani

Technical Session XII (9:15 am – 10:45 am)			
Session Chairs: Dr. Muhammad Naseem, Dr. Ubaida Fatima			
Venue: Seminar Room 2 (Ground Floor)			
Microsoft Teams meeting: Click here to join the meeting			
Keynote Speaker Session (9:15 am – 09:30 am)	**AI TECHNIQUES FOR THE DESIGN OF SPECIFIC SHORT FEMORAL STEMS IN PATIENTS WITH PRIMARY HIP ARTHROPLASTY (Online)** *Prof. Dr. Ciro Rodriguez R., Universidad Nacional Mayor de San Marcos, Peru*		
Time	**Paper ID**	**Paper Title**	**Authors**
9:30 am - 9:45 am	7	A Novel Depth Scene Classification with Vision Transformer and ResNet Model	**Muhammad Waqas Ahmed,** Ahmad Jalal
9:45 am - 10:00 am	99	Backscattering in Nanoparticles for Energy Harvesting Applications	**Adnan Shafi Minhas**, Muqadas Javed, Ahsan Irshad, Ghulam Asghar, Mehboob Alam, Syed Hassan Mujtaba Jafri
10:00 am - 10:15 am	255	Design and Development of Decentralized Swarm Network with Self-Reacting Capability	**Naqash Ahmad,** Hammand Nazeer, Hussian Abbas, Sana Asrar, Sohaib Ahmad, Mamoon Ahmad
10:15 am - 10:30 am	4	Unmanned Aerial Vehicle for Human Surveillance using Multi-Features and Neuro-Fuzzy Classifier	**Laiba Zahoor**, Ahmad Jalal
10:30 am - 10:45 am	6	Multiple Vehicle Detection and Tracking via RetinaNet with KLT Tracker	**Muhammad Hanzla**, Muhammad Ovais Yusuf, Ahmad Jalal

Department of Biomedical Engineering, Faculty of Engineering
in collaboration with IEEE Karachi Section
presents
📅 December 30-31   26th INMIC 2024

26th INMIC
International Multi Topic Conference 2024

Technical Session XIII (09:15 am – 10:45 am)			
Session Chairs: Dr. Muhammad Najamul Islam, Dr. Khalid Bin Muhammad			
Venue: Class Room No C-22 (2nd Floor)			
Microsoft Teams meeting: **Click here to join the meeting**			
Keynote Speaker Session (9:15 am – 09:30 am)	**3D BIOPRINTING COMPLEX HUMAN TISSUES** (Online) *Prof. Dr. Stephanie Willerth, University of Victoria, Canada*		
Time	**Paper ID**	**Paper Title**	**Authors**
9:30 am - 9:45 am	5	Robust Human Pose Estimation and Action Recognition over Multi-level Perceptron	Muhammad Hanzla, **Wasim Wahid,** Ahmad Jalal
9:45 am - 10:00 am	12	Remote Sensing based Traffic Monitoring via Semantic Segmentation and Deep Learning	**Ghulam Mujtaba,** Ahmad Jalal
10:00 am - 10:15 am	121	Drone Based Traffic Surveillance using Semantic Segmentation and DeepSort	**Ghulam Mujtaba,** Ahmad Jalal
10:15 am - 10:30 am	193	A Comparative Analysis between Visual Language and Large Language Models to Monitor Contaminated Water in the face of Climate Change	**Maaz Imam,** Ayesha Irshad, Ashad Qureshi, Muhammad Farrukh
10:30 am - 10:45 am	266	The Early Prediction of Chronic Diseases Through Diverse Machine Learning Techniques	**Saba Naz,** Dr. Ubaida Fatima

Technical Session XIV (09:15 am – 10:45 am)			
Session Chairs: Mr. Wasim Munir			
Venue: Class Room No C-17 (2nd Floor) – **Online**			
Microsoft Teams meeting: **Click here to join the meeting**			
Time	**Paper ID**	**Paper Title**	**Authors**
9:30 am - 9:45 am	172	A Deep Learning Model for Detection of Lung Pathologies by Image Processing of X-ray Images	**Eman Shahid,** Amna Tariq, Sharjeel Bin Rauf, Muhammad Ali Nauman, Farhan Yousaf, Muhammad Abdullah
9:45 am - 10:00 am	15	Image Encryption Using DNA Encoding, Snake Permutation and Chaotic Substitution Techniques	Waleed Ahmed Farooqui, **Jawad Ahmad,** Nadeem Kureshi, Fawad Ahmed, Aizaz Ahmad Khattak, **Muhammad Shahbaz Khan**
10:00 am - 10:15 am	17	A Hybrid Neural Network with Smart Skip Connections for High-Precision, Low-Latency EMG-Based Hand Gesture Recognition	Hafsa Wazir, **Jawad Ahmad,** Muazzam A. Khan, Sana Ullah Jan, Fadia Ali Khan, **Muhammad Shahbaz Khan**
10:15 am - 10:30 am	113	Audio Deepfake Detection: End-to-End training with powerful pretrained ASR	**Kh Hamad Mansoor,** Mehreen Alam
10:30 am - 10:45 am	256	Brain Tumor Segmentation and Boundary Detection using Image Processing Techniques in MATLAB	**Muhammad Omar Cheema,** Hedi A. Guesmi
10:45 am - 11:00 am	151	AI-based Lung Cancer Prediction: Development, Comparison, and Evaluation of Machine Learning Models	**Anusha Ishtiaq,** Noman Naseer, Dr. Zia Mohy-ud-din, Alina Akhlaq, Hedi A. Guesmi

Technical Session XV (09:15 am – 10:45 am)			
Session Chairs: Engr. Hasan Ali, Engr. Tooba Khan			
Venue: Class Room No C-19 (2nd Floor) – Online			
Microsoft Teams meeting: Click here to join the meeting			
Time	**Paper ID**	**Paper Title**	**Authors**
9:15 am – 9:30 am	167	Predicting Effect of Study Time and Educational Support on Academic Success and Failure through Machine Learning	Urooj Abid, **Dr. Fizza Farrukh**, Noman Naseer
9:30 am - 9:45 am	33	Enhancing Brain Tumor Classification Using CNN: Impact of Data Augmentation on Model Generalization and Performance in Federated Learning	**Zia Ur Rehman,** Dr. Syed Nasir Shah, Dr. Saif Ul Islam, Uzair Hassan
9:45 am - 10:00 am	43	Misogynistic Content Detection in Roman Urdu Tweets Based on Transformer Models	**Waseem Ullah Khan,** Salman Ahmed, Safdar Nawaz Khan, YOUSAF Khan, Aftab Khan, Shafi Ullah Kamran
10:00 am - 10:15 am	38	A Generative AI-Driven CTI Framework for IDS using Machine Learning and Knowledge Graph	**Qazi Khalid Amin,** Syed Hussain Ali Shah Gillani, Dr. Syed Nasir Shah, Altaf Hussain
10:15 am - 10:30 am	189	Visual Question Answering Based on Object Detection and Recognition	**Areesa Ashfaq,** Muhammad Ehatisham-ul-Haq, Fiza Murtaza
10:45 am - 11:00 am	149	Leveraging Synthetic Minority Over-Sampling Technique for Class Imbalance in Machine Learning-based Breast Cancer Diagnosis	**Noor Fatima,** Dr. Noman Naseer, Dr. Zia Mohy-ud-din

Technical Session XVI (11:15 am - 12:45 pm)			
Session Chairs: Dr. Asif Aziz, Dr. Anam Akbar			
Venue: Seminar Room 1 (Ground Floor)			
Microsoft Teams meeting: Click here to join the meeting			
Keynote Speaker Session (11:15 am – 11:30 am)	**TOWARDS A DATA-DRIVEN PUBLIC SECTOR: ASSESSING MATURITY OF DATA FOR PRODUCTIVE, INCLUSIVE AND TRUSTWORTHY GOVERNANCE** *Dr. Muhammad Hanif, Chalmers University, Sweden*		
Time	**Paper ID**	**Paper Title**	**Authors**
11:30 am - 11:45 am	97	Smart Traffic Monitoring with EfficientNet and Neuro-Fuzzy Classifier via Aerial Surveillance	**Ghulam Mujtaba**
11:45 am - 12:00 pm	162	Remote Sensing-based Vehicle Monitoring System using YOLOv10 and CrossViT	**Ghulam Mujtaba,** Dr. Arif Ullah, Ahmad Jalal
12:00 pm - 12:15 pm	251	AI-Powered Dental Caries Detection	Hira Khuwaja, **Ahsan Ali Khidri,** Rabeea Jaffari, Shehwar Javed
12:15 pm - 12:30 pm	177	Decoding Stock Market Predictions: Insights from Explainable AI Using Layer-wise Relevance Propagation	**Hira Tanveer,** Seemab Latif

Technical Session XVII (11:15 am - 12:45 pm)			
Session Chairs: Dr. Muhammad Imran Saleem, Dr. Shaheena Noor			
Venue: Seminar Room 02 (Ground Floor)			
Microsoft Teams meeting: Click here to join the meeting			
Keynote Speaker Session (11:15 am – 11:30 am)	**DIGITAL CONNECTIVITY FOR SUSTAINABLE FUTURES: RANSFORMING SOCIETY, ECONOMY, AND INDUSTRY** *Prof. Dr. Muhammad Zeeshan Shakir, University of the West of Scotland, UK*		
Time	**Paper ID**	**Paper Title**	**Authors**
11:30 am - 11:45 am	144	Dynamic Financial Time Series Modeling with Rapid Adaptation via Meta Learning	**Kubra Noor**, Dr. Ubaida Fatima
11:45 am - 12:00 pm	117	Impedance-Based Crack Detection in Chemical Tanks: Enhancing Preventive Maintenance with Eddy Current Techniques	**Tariq Mumtaz**, Syed Muhammad Muslim Hussain, Syed Muhammad Ali Naqvi
12:00 pm - 12:15 pm	108	Enhancing Object Detection in Low-Light Environments Using Image Enhancement Techniques and YOLO Architectures	**Syed Muhammad Ammar Ali Jaffri**, Munim ul Haq, Muhammad Farhan
12:15 pm - 12:30 pm	188	LLM-Guided Speech Processing for 3D Human Motion Generation	Muhammad Hasham Qazi, Sandesh Kumar, **Farhan Khan**

Technical Session XVIII (11:15 am - 12:45 pm)			
Session Chairs: Dr. Mahesh Kumar, Dr. Junaid Mir			
Venue: Class Room C-22 (2nd Floor)			
Microsoft Teams meeting: Click here to join the meeting			
Keynote Speaker Session (11:15 am – 11:30 am)	**EMERALDS: ELECTRONIC MEDICAL RECORDS DRIVEN AUTOMATED LUNG NODULE DETECTION AND CANCER RISK STRATIFICATION** *Dr. Furqan Shaukat, University of Engineering and Technology Taxila, Pakistan*		
Time	**Paper ID**	**Paper Title**	**Authors**
11:30 am - 11:45 am	118	Performance and Loss Analysis of Wide Bandgap Power Modules for High-Capacity Power Converters	**Dr. Tehseen Ilahi,** Saad Izhar, Dr. Tausif Zahid, Dr. Muhammad Zahid, Ibadullah Safdar, Shehan Latif
11:45 am - 12:00 pm	11	Robust Deep Interaction Recognition Framework with Multi-Stage Feature Analysis	**Tanvir Fatima Naik Bukht,** Ahmad Jalal
12:00 pm - 12:15 pm	154	Design and development of prosthesis for ultra short knee stump	**Muhammad Waleed Tariq,** Muhammad Faiq Nasir, Hammad Nazeer, Noman Naseer, Hassaan Iqbal
12:15 pm - 12:30 pm	265	Sarcasm Detection in Multi-lingual Text through Embedding-Enhanced Transformer-based BERT Variants	**Muhammad Azhar,** Muhammad Islam

Organized by Department of Biomedical Engineering, Faculty of Engineering
SALIM HABIB UNIVERSITY

Department of Biomedical Engineering, Faculty of Engineering
in collaboration with IEEE Karachi Section
presents

December 30-31

26th INMIC 2024

26th INMIC
International Multi Topic Conference 2024

Technical Session XIX (11:15 am - 12:45 pm)			
Session Chairs: Engr. Tooba Khan, Engr. Amna Sheikh			
Venue: Class Room C-17 (2nd Floor) – Online			
Microsoft Teams meeting: Click here to join the meeting			
Time	Paper ID	Paper Title	Authors
11:30 am - 11:45 am	224	FPGA Based Artificial Neural Network Accelerator	**Haroon-Ur-Rashid Khan,** Eeman Fatima, Muhammad Fahad, Hiba Abrar, Haroon Waris
11:45 am - 12:00 pm	196	Research on Assessing Fault Impacts on Power Quality in Modern Smart Distribution Systems with Renewable Integration	**Abid Ali,** Zunaira Huma, Yuanqing Xia, Muhammad Fahad Zia, Akhtar Hussain, Tayyab Manzoor
12:00 pm - 12:15 pm	36	OGAR: Augmented Reality Application for Assisting Workers in the Oil and Gas Industry	Fahad Alsubaiei, Ahmed Alhendi, Khalifa Alkhalifa, Shaheen Alsharaf, Abdulaziz Alfoudari, **Muhammad Nadeem**
12:15 pm - 12:30 pm	52	E2A Translate: An English to Arabic Rule-Based Translation Framework	Ghadah Naif Alwakid, **Najm Us Sama,** Mamoona Humayun, Noor Zaman Jhanjhi
12:30 pm - 12:45 pm	237	Detection of Sinus Bradycardia with Electrocardiogram using Machine Learning Techniques	Sitara Khan, Salaar Khan, Zulqarnain Asghar, **Haseeb Iqbal**
12:45 pm – 01:00 pm	282	Comparative Study of Transfer Learning with model VGG16 and VGG19 for Breast Cancer Classification	**Sumra Khan,** Fatima Tuz Zahra, Amber Asif, Sheeraz Arif, Uzma Fatima

Technical Session XX (11:15 am - 12:45 pm)			
Session Chairs: Engr. Hassan Ali, Engr. Gul Munir			
Venue: Class Room C-19 (2nd Floor) – Online			
Microsoft Teams meeting: Click here to join the meeting			
Time	Paper ID	Paper Title	Authors
11:30 am - 11:45 am	137	Pneumonia Detection in Chest X-Ray Images: Handling Class Imbalance	**Wardah Ali,** Eesha Qureshi, Omama Ahmed Farooqi, Dr Rizwan Ahmed Khan
11:45 am - 12:00 pm	145	Design and Implementation of ElectroWet cup for Electrical Stimulation in cupping therapy	**Ayesha Noor,** Hadia Fatima, Dr. Zia Mohy Ud Din
12:00 pm - 12:15 pm	34	A Review on Artificial Intelligence Based Smart Electrical Power Systems	Unzila Mahar, Muhammad Amir Raza, **Abdul Karim,** Muhammad Azan, Khan Muhammad, Sarmad Soomro
12:15 pm - 12:30 pm	183	Fault Detection and Classification in Electrical Power Distribution Network Through Machine Learning	**Muhammad Azan,** Muhammad Amir Raza, Hizbullah Odho, Hamza Arain, Rana Ahmed, Zuhaib Ali
12:30 pm - 12:45 pm	42	In-Silico Approach for Finding Consistent Deleterious Non-Synonymous SNPs in Diabetes Mellitus	**Rahemeen Khan**